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UNIVERSITÄTSKLINIKUM ULM | Institut für klinische und experimentelle Trauma-Immunologie

Institut für klinische und experimentelle Trauma-Immunologie

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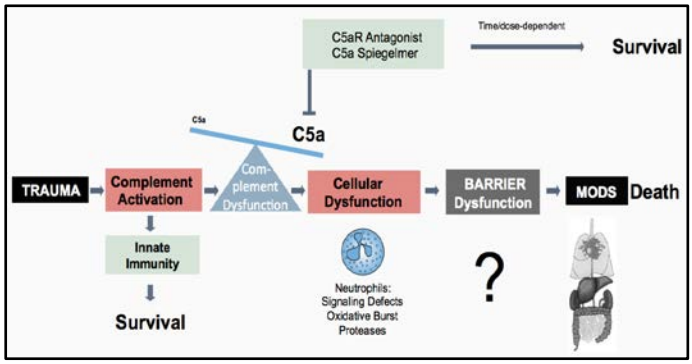
Announcement: Master Thesis at the Institute of Clinical and Experimental Trauma-Immunology

Sepsis and sever physical trauma are complex entities in clinical management. Despite progress in emergency and critical care medicine, a key factor for bad outcome is the excessive activation of the innate immune system, which contributes to the multi organ dysfunction syndrome (MODS) and ultimately, death (1,2).



During severe systemic inflammation, there are distinct alterations in the biology of leukocytes, e.g. the intracellular pH, their phagocytotic activity and their interaction with platelets (3–5). There are several factors like the complement factor C5a that are involved in these processes. However, further research is warranted to elucidate how other complement cleave products like iC3b are involved in this process.

Our institute offers students the opportunity to realize their master thesis (molecular medicine, biology, biochemistry or related fields) in a working environment that combines experimental research with strong connections to clinical medicine in the field of immunology research with a focus on shock, sepsis, and injuries. We are looking for committed and self-sufficiently working students, preferably with a background knowledge in the routine methods of immunology (e.g. western blotting, immunohistochemistry, and enzyme-linked immunosorbent assays).

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Currently, we are seeking a highly motivated master candidate starting in summer term 2021 or winter term 2021/22.

We offer you comprehensive insights into planning, executing and interpreting experiments and provide you with a basic knowledge in statistical analysis of scientific data. In the course of your research, you will be mentored to perform routine assays of immunological research. You will gain deep insights into flow cytometry and a clinically relevant ex vivo whole blood model system. Currently we are seeking potential candidates to further elucidate the role of the complement cleavage product iC3b in neutrophile activation during systemic inflammation.

For further information of our research field, please refer to https://www.uniklinik-ulm.de/klinische-und-experimentelle-trauma-immunologie/team/dr-med-david-messerer.html. Please send an informative letter of application as well as your CV (including a list of previous internships and a transcript of records) to david.messerer@uni-ulm.de. Applications can be drafted in German or in English. For questions, feel free to contact Dr. Messerer.

Prof. Dr. med. Markus-Huber-Lang

David Messerer

Dr. med. David Messerer

References:

1. Huber-Lang M, Lambris JD, Ward PA. Innate immune responses to trauma. Nat Immunol. 2018 Apr;19(4):327–41.
2. Messerer DAC, Halbgebauer R, Nilsson B, Pavenstädt H, Radermacher P, Huber-Lang M. Immunopathophysiology of trauma-related acute kidney injury. Nat Rev Nephrol [Internet]. 2020 Sep 21 [cited 2020 Oct 14]; Available from: http://www.nature.com/articles/s41581-020-00344-9
3. Denk S, Neher MD, Messerer DAC, Wiegner R, Nilsson B, Rittirsch D, et al. Complement C5a Functions as a Master Switch for the pH Balance in Neutrophils Exerting Fundamental Immunometabolic Effects. J Immunol Baltim Md 1950. 2017 15;198(12):4846–54.
4. Messerer DAC, Denk S, Föhr KJ, Halbgebauer R, Braun CK, Hönes F, et al. Complement C5a Alters the Membrane Potential of Neutrophils during Hemorrhagic Shock. Mediators Inflamm. 2018;2018:2052356.
5. Messerer DAC, Vidoni L, Erber M, Stratmann AEP, Bauer JM, Braun CK, et al. Animal-Free Human Whole Blood Sepsis Model to Study Changes in Innate Immunity. Front Immunol. 2020 Oct 14;11:571992.